CLAIMS

1. A pharmaceutical composition comprising
   a) 1 to 200 mg/mL of an antibody binding to human CD38, comprising
      - an antigen-binding region comprising a VH CDR1 having the sequence as set forth in SEQ ID NO:2, a VH CDR2 having the sequence as set forth in SEQ ID NO:3, a VH CDR3 having the sequence as set forth in SEQ ID NO:4, a VL CDR1 having the sequence as set forth in SEQ ID NO:6, a VL CDR2 having the sequence AAS, and a VL CDR3 having the sequence as set forth in SEQ ID NO:7, and
      - an Fc region comprising a mutation in one or more amino acid residues selected from the group corresponding to E430, E345 and S440 in a human IgG1 heavy chain, wherein the amino acid residues are numbered according to the EU index;
   b) 5-40 mM histidine or acetate;
   c) 100 – 400 mM sorbitol or sucrose; and
   d) a surfactant.
2. The pharmaceutical composition according to claim 1, consisting essentially of (a), (b), (c) and (d).
3. The pharmaceutical composition according to any one of claims 1 and 2, consisting of (a), (b), (c) and (d) in aqueous solution.
4. The pharmaceutical composition according to any one of claims 1 to 3, wherein the antibody comprises
   - a variable heavy chain (VH) region comprising SEQ ID NO:1 or an amino acid sequence having at least 80% identity, such as 90%, or 95%, or 97%, or 98%, or 99%, to SEQ ID NO:1; and/or
   - a variable light chain (VL) region comprising SEQ ID NO:5 or an amino acid sequence having at least 80% identity, such as 90%, or 95%, or 97%, or 98%, or 99%, to SEQ ID NO:5.
5. The pharmaceutical composition according to claim 4, wherein, in the antibody
   - the VH differs from SEQ ID NO:1 by 12 or less, such as 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 or 1 mutations such as substitutions, insertions or deletions of amino acid residues; and/or
   - the VL differs from SEQ ID NO:5 by 12 or less, such as 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 or 1 mutations such as substitutions, insertions or deletions of amino acid residues.

6. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody comprises a VH region comprising the sequence of SEQ ID NO:1 and a VL region comprising the sequence of SEQ ID NO:5.

7. The pharmaceutical composition according to any one of the preceding claims, wherein, in the antibody, the mutation in the one or more amino acid residues is selected from the group consisting of E430G, E345K, E430S, E430F, E430T, E345Q, E345R, E345Y, S440Y and S440W, such as from the group corresponding to E430G, E345K, E430S and E345Q.

8. The pharmaceutical composition according to any one of the preceding claims, wherein the mutation in the one or more amino acid residues comprises or consists of E430G.

9. The pharmaceutical composition according to any one of the preceding claims, wherein the Fc region comprises one or more further mutations in amino acid residues other than those corresponding to E430, E345 and S440 in a human IgG1 heavy chain, and

wherein the one or more further mutations do not reduce the complement-dependent cytotoxicity (CDC) and/or antibody-dependent cell-mediated cytotoxicity (ADCC) induced by the antibody without the one or more further mutations.

10. The pharmaceutical composition according to claim 9, wherein the one or more further mutations are 12 or less, such as 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 or 1 mutations such as substitutions, insertions or deletions of amino acid residues.

11. The pharmaceutical composition according to any one of the preceding claims, wherein, in the antibody, the amino acid residue corresponding to Lys (K) at position 447 in a human IgG1 heavy chain, wherein the amino acid residues are numbered according to the EU index, is absent.

12. The pharmaceutical composition according to any one of the preceding claims, wherein the Fc region is, except for the recited mutations, a human IgG1, IgG2, IgG3 or IgG4 isotype or a mixed isotype thereof.

13. The pharmaceutical composition according to any one of the preceding claims, wherein the Fc region is, except for the recited mutations, a human IgG1 Fc region, such as a human IgG1m(f), IgG1m(a), IgG1m(x), IgG1m(z) allotype or a mixed allotype of any two or more thereof.

14. The pharmaceutical composition according to any one of the preceding claims, wherein the Fc region is a human IgG1 Fc region comprising, except for the recited mutations, amino acid residues 99 to 329 (direct numbering) of SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23 or SEQ ID NO:45.

15. The pharmaceutical composition according to any one of the preceding claims, wherein the Fc region is a human IgG1 Fc region comprising amino acid residues 99 to 329 of

SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:33 or SEQ ID NO:46.

16. A pharmaceutical composition comprising
    a) 1 to 200 mg/mL of an antibody binding to human CD38, comprising
        - a heavy chain comprising a VH region comprising a VH CDR1 having the sequence as set forth in SEQ ID NO:2, a VH CDR2 having the sequence as set forth in SEQ ID NO:3, a VH CDR3 having the sequence as set forth in SEQ ID NO:4 and a human IgG1 CH region with a mutation in one or more of E430, E345 and S440, the amino acid residues being numbered according to the EU index, and
        - a light chain comprising a VL region comprising a VL CDR1 having the sequence as set forth in SEQ ID NO:6, a VL CDR2 having the sequence AAS, and a VL CDR3 having the sequence as set forth in SEQ ID NO:7;
    b) 5-40 mM histidine or acetate;
    c) 100 – 400 mM sorbitol or sucrose; and
    d) a surfactant.

17. A pharmaceutical composition according to claim 16, consisting essentially of (a), (b), (c) and (d).

18. A pharmaceutical composition according to any one of claims 16 and 17, consisting of (a), (b), (c) and (d) in aqueous solution.

19. The pharmaceutical composition according to any one of claims 16 to 18, wherein the antibody comprises
    - a heavy chain comprising a VH region comprising SEQ ID NO:1 and a human IgG1 CH region with a mutation in one or more of E430, E345 and S440, wherein the amino acid residue numbering is according to the EU index, and
    - a light chain comprising a VL comprising SEQ ID NO:5.

20. The pharmaceutical composition according to any one of claims 16 to 19, wherein the mutation comprises or consists of E430G.

21. The pharmaceutical composition according to any one of claims 16 to 20, wherein the human IgG1 CH region is, except for the recited mutations, a human IgG1m(f), IgG1m(a), IgG1m(x) or IgG1m(z) allotype, or a mixed allotype of any two or more thereof.

22. The pharmaceutical composition according to any one of claims 16 to 21, wherein the human IgG1 CH region comprises, except for the recited mutations, the amino acid sequence of SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23 or SEQ ID NO:45.

23. The pharmaceutical composition according to claim 22, wherein the human IgG1 CH region comprises one or more further mutations in amino acid residues other than those corresponding to E430, E345 and S440 in a human IgG1 heavy chain, wherein the amino acid residues are numbered according to the EU index, optionally wherein said one or more further mutations are 12 or less, such as 11, 10, 9, 8, 7, 6, 5, 4, 3, 2 or 1 mutations such as substitutions, insertions or deletions of amino acid residues.

24. The pharmaceutical composition according to any one of claims 15 to 23, wherein the CH region comprises an amino acid sequence selected from the group consisting of SEQ ID NO:24 to SEQ ID NO:33 and SEQ ID NO:46.

25. The pharmaceutical composition according to claim 24, wherein the CH region comprises SEQ ID NO:24 or SEQ ID NO:46, optionally wherein the light chain comprises a CL comprising SEQ ID NO:37.

26. The pharmaceutical composition according to any one of claims 16 to 25, wherein the amino acid residue corresponding to Lys (K) at position 447 in a human IgG1 heavy chain, wherein the amino acid residues are numbered according to the EU index, is absent.

27. The pharmaceutical composition according to any one of claims 16 to 26, which is a bivalent antibody.

28. The antibody according to any one of the preceding claims, wherein the antibody is, except for the recited mutation(s), a human monoclonal full-length monospecific bivalent IgG1m(f), κ antibody.

29. The pharmaceutical composition according to any one of the preceding claims, wherein a) is 1 to 80 mg/mL, such as 1 to 60 mg/ml, 1 to 40 mg/mL, 1 to 30 mg/ml or 1 to 25 mg/ml; 2 to 80 mg/mL, such as 2 to 40 mg/mL or 2 to 30 mg/ml; or 10 to 80 mg/mL, such as 10 to 40 mg/mL or 10 to 30 mg/ml; or 15 to 80 mg/ml, such as 15 to 40 mg/ml, such as 15 to 25 mg/ml, such as 2 mg/ml, 4 mg/mL, 6 mg/mL, 8 mg/mL, 10 mg/mL, 12 mg/mL, 14 mg/mL, 16 mg/mL, 18 mg/mL, 20 mg/mL, 22 mg/mL, 24 mg/mL, 26 mg/mL, 28 mg/mL, 30 mg/mL, 32 mg/mL, 34 mg/mL, 36 mg/mL, 38 mg/mL, 40 mg/mL, or 50 mg/mL; preferably about 20 mg/mL, such as 20 mg/mL, of the antibody.

30. The pharmaceutical composition according to any one of the preceding claims wherein b) is 5 to 30 mM, such as 5 to 25 mM, such as 10 mM, 11, mM, 12 mM, 13 mM, 14 mM, 15 mM, 16 mM, 17 mM, 18 mM, 19 mM, 20 mM, 21 mM, 22 mM, 23mM, 24 mM, 25 mM, 26 mM, 27 mM, 28 mM, 29 mM or 30 mM; preferably about 20 mM, such as 20 mM of histidine or acetate; such as histidine.

31. The pharmaceutical composition according to any one of the preceding claims, wherein c) is 100 to 350 mM, such as 100 to 300 mM, 100 to 260 mM, 100 to 200 mM, 150 to

350 mM, 200 to 300 mM, 200 to 260 mM, 200 to 350 mM, 200 to 300 mM, 200 to 260 mM, 230 to 350 mM, 230 to 300 mM, 230 to 260 mM or 240 to 260 mM; such as 245 mM, 246 mM, 247 mM, 248 mM, 249 mM, 250 mM, 251 mM, 252 mM, 253 mM, 254 mM, or 255 mM, preferably about 250 mM, such as 250 mM of sorbitol or sucrose, such as sorbitol.

32. The pharmaceutical composition according to any one of the preceding claims wherein the pH of the pharmaceutical composition is 5.0 to 6.5, such as 5.5 to 6.5, such as 5.6 to 6.5, 5.7 to 6.5, 5.8 to 6.5, 5.9 to 6.5, 6.0 to 6.5, 5.5 to 6.4, 5.5 to 6.3, 5.5 to 6.2, 5.5 to 6.1, 5.5 to 6.0, 5.7 to 6.3, 5.8 to 6.2, 5.9 to 6.1, such as about 6, such as 6 or 6.0.

33. The pharmaceutical composition according to any one of the preceding claims, wherein the surfactant is selected from the group comprising glycerol monooleate, benzethonium chloride, sodium docusate, phospholipids, polyethylene alkyl ethers, sodium lauryl sulfate and tricaprylin, benzalkonium chloride, citrimide, cetylpyridinium chloride and phospholipids, alpha tocopherol, glycerol monooleate, myristyl alcohol, phospholipids, poloxamers, polyoxyethylene alkyl ethers, polyoxyethylene castor oil derivatives, polyoxyethylene sorbintan fatty acid esters, polyoxyethylene sterarates, polyoxyl hydroxystearate, polyoxylglycerides, polysorbates, propylene glycol dilaurate, propylene glycol monolaurate, sorbitan esters sucrose palmitate, sucrose stearate, tricaprylin and TPGS.

34. The pharmaceutical composition according to any one of the preceding claims, wherein the surfactant is a polysorbate.

35. The pharmaceutical composition according to any one of the preceding claims, wherein the surfactant is polysorbate 20 or 80, such as polysorbate 80.

36. The pharmaceutical composition according to any one of the preceding claims, wherein the concentration of the surfactant is from about 0.005% to 0.5% w/v, such as from about 0.01 to 0.1 % w/v, such as from about 0.01 to 0.09 % w/v such as from about 0.01 to 0.06 % w/v such as from about 0.01 to 0.05% w/v such as 0.02% w/v or 0.03% w/v or 0.04% w/v or 0.05% w/v, or 0.06% w/v, such as about 0.04% w/v or 0.04% w/v.

37. The pharmaceutical composition according to any one of the preceding claims, wherein the composition has a pH of 5.9 to 6.1, such as about 6 or 6.0 and comprises or consists essentially of:
    a) 1 to 80 mg/mL of the antibody
    b) 15 to 40 mM histidine
    c) 200 to 300 mM sorbitol
    d) 0.01% to 0.1 % w/v of a surfactant, preferably polysorbate, such as polysorbate 20 or polysorbate 80, such as polysorbate 80.

38. The pharmaceutical composition according to any one of the preceding claims, wherein the composition has a pH of 5.9 to 6.1, such as about 6 or 6.0 and comprises or consists essentially of:
    a) 10 to 40 mg/mL of the antibody
    b) 15 to 40 mM histidine
    c) 200 to 300 mM sorbitol
    d) 0.02% to 0.06% w/v of a surfactant, preferably polysorbate, such as polysorbate 20 or polysorbate 80, such as polysorbate 80.

39. The pharmaceutical composition according to any one of the preceding claims, wherein the composition has a pH of 5.9 to 6.1, such as about 6 or 6.0 and comprises or consists essentially of:
    a) 10 to 40 mg/mL of the antibody
    b) 15 to 25 mM histidine
    c) 240 to 260 mM sorbitol
    d) 0.02% to 0.06% w/v of a surfactant, preferably polysorbate, such as polysorbate 20 or polysorbate 80, such as polysorbate 80.

40. The pharmaceutical composition according to any one of the preceding claims, wherein the composition is stable for a period of at least 8 weeks, such as for a period of 1-60 months, 1-48 months, 1-36 months, 1-30 months, 1-24 months, 1-18 months, 1-12 months or 1-6 months; such as for 2-60 months, 2-48 months, 2-36 months, 2-30 months, 2-24 months, 2-18 months, 2-12 months or 2-6 months; such as for 3-60 months, 3-48 months, 3-36 months, 3-30 months, 3-24 months, 3-18 months, 3-12 months or 3-6 months, such as for 48 months, 36 months, 30 months, 24 months, 18 months, 12 months, or 6 months.

41. The pharmaceutical composition according to claim 40, wherein stability is determined when the composition is kept at 5°C±3°C, 25°C±5°C or 40°C±10°C, such as at 5°C±3°C, about 25°C±5°C or about 40°C, such as at 5°C±3°C.

42. The pharmaceutical composition according to claim 40 or 41, wherein stability is assessed by
    (a) sub-visible particle count;
    (b) pH;
    (c) protein concentration;
    (d) size-exclusion chromatography;
    (e) isoelectric focusing;
    (f) electrophoresis under reducing conditions;

(g) electrophoresis under non-reducing conditions; and/or

(h) visual inspection

43. The pharmaceutical composition according to any one of claims 40 to 42, wherein stability is assessed by determining

(a) sub-visible particle count using a micro-flow imaging (MFI) microscope, optionally as provided in Example 12;

(b) pH, optionally as provided in Example 11;

(c) protein concentration using absorbance at 280 nm ($A_{280}$) optionally as provided in Example 11;

(d) relative amount of antibody monomer as compared to the sum of antibody monomer, high molecular weight (HMW) species and low molecular weight (LMW) species present in the composition using size exclusion chromatography, optionally as provided in Example 11;

(e) the relative amount of antibody as compared to the sum of antibody, acidic variants of the antibody and basic variants of the antibody by imaged capillary isoelectric focusing (icIEF), optionally as provided in Example 11;

(f) the relative amount of the sum of the light chain and heavy chain as compared to the sum of the light chain, heavy chain and non-glycosylated heavy chain by reduced capillary electrophoresis, optionally as provided by Example 11;

(g) the relative amount of antibody peak as compared to the sum of antibody, peaks with molecular weights lower than the antibody peak and peaks with molecular weights higher than the antibody peak; and/or

(h) visual appearance, optionally as provided in Example 11.

44. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody is capable of binding to His-tagged human CD38, as specified in SEQ ID NO: 39.

45. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody has an inhibitory effect on the cyclase activity of human CD38.

46. The pharmaceutical composition according to claim 45, wherein the antibody inhibits the cyclase activity of human CD38 by at least about 40%, such as at least about 50%, such as at least about 60%, optionally wherein the inhibition of cyclase activity is determined by an assay comprising the steps of:

a) seeding 200,000 Daudi or Wien133 cells in 100 µL 20 mM Tris-HCL per well; or seeding 0.6 ug/mL His-tagged soluble human CD38 (SEQ ID NO:39) in 100 µL 20 mM Tris-HCL per well in a multi-well plate;

b) adding 1 µg/mL CD38 antibody and 80 µM NGD to each well;
c) measuring fluorescence until a plateau is reached (e.g.; 5, 10 or 30 minutes); and
d) determining the percentage inhibition as compared to a control, such as a well incubated with an isotype control antibody.

47. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody induces apoptosis in the presence, but not in the absence, of an Fc-cross-linking antibody.

48. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody induces CDC, ADCC, antibody-dependent cell-phagocytosis (ADCP), trogocytosis, or any combination thereof, of cells expressing human CD38.

49. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody induces CDC of cells expressing human CD38.

50. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody induces CDC against Daudi cells (ATCC No. CCL-213) or Ramos cells (ATCC No. CRL-1596) resulting in a maximum lysis at least 50%, such at least 60%, such as at least 70% higher than that obtained with a reference antibody differing only in the absence of the one or more mutations in the Fc region.

51. The pharmaceutical composition according to claim 50, wherein the CDC is determined by an assay comprising the steps of:

a) plating 100,000 CD38-expressing cells in 40 µL culture medium supplemented with 0.2% BSA per well in a multi-well plate;
b) preincubating cells for 20 minutes with 40 µL of serially diluted CD38 antibody (0.0002-10 µg/mL);
c) incubating each well for 45 minutes at 37ºC with 20 percent of pooled normal human serum;
d) adding a viability dye and measuring the percentage of cell lysis on a flow cytometer;
e) determining the maximum lysis using non-linear regression.

52. The pharmaceutical composition according to any one of the preceding claims, wherein the antibody is a full-length bivalent antibody comprising, consisting, or consisting essentially of two heavy chains and two light chains, wherein

- each heavy chain comprises a VH region and a CH region, wherein the VH region comprises SEQ ID NO:1 and the CH region comprises SEQ ID NO:24 or SEQ ID NO:46, and
- each light chain comprises a VL region and a CL region, wherein the VL region comprises SEQ ID NO:5 and the CL region comprises SEQ ID NO:37.

53. A pharmaceutical composition having a pH of about 6 and comprising or consisting essentially of

    a) about 20 mg/mL of an antibody binding to human CD38,
    b) about 20 mM histidine,
    c) about 250 mM sorbitol, and
    d) about 0.04% w/v of polysorbate 80,

    wherein the antibody is a full-length bivalent antibody comprising, consisting, or consisting essentially of two heavy chains and two light chains, wherein

    - each heavy chain comprises a VH region and a CH region, wherein the VH region comprises SEQ ID NO:1 and the CH region comprises SEQ ID NO:24 or SEQ ID NO:46, and
    - each light chain comprises a VL region and a CL region, wherein the VL region comprises SEQ ID NO:5 and the CL region comprises SEQ ID NO:37.

54. The pharmaceutical composition according to claim 53, having a pH of about 6 and comprising, consisting or consisting essentially of

    a) 20 mg/mL of the antibody,
    b) 20 mM histidine,
    c) 250 mM sorbitol, and
    d) 0.04% w/v of polysorbate 80,

    in aqueous solution.

55. The pharmaceutical composition according to any one of claims 52 to 54, wherein the antibody is produced in Chinese hamster ovary (CHO) cells.

56. The pharmaceutical composition according to any one of claims 52 to 55, wherein the antibody is obtained or obtainable by a method comprising expressing the heavy chain and the light chain in a CHO cell.

57. The pharmaceutical composition according to any one of the preceding claims, wherein the composition is for intravenous or subcutaneous injection or infusion.

58. The pharmaceutical composition according to any one of the preceding claims, wherein the composition is a concentrate to be diluted; such as in a 0.9% NaCl (saline) or dextrose solution, optionally a 5% w/v dextrose solution.

59. The pharmaceutical composition according to any one of the preceding claims, for use as a medicament.

60. The pharmaceutical composition according to any one of the preceding claims, for use in treating a disease involving cells expressing CD38.

61. The pharmaceutical composition according to any one of the preceding claims, for use in inducing a CDC-response against a tumor comprising cells expressing CD38.

62. The pharmaceutical composition according to any one of the preceding claims, for use in treating or preventing a cancer in a subject comprising cells expressing human CD38.

63. The pharmaceutical composition according to any one of the preceding claims, for use in treating a cancer refractory to a prior therapy comprising one or more of a CD38 antibody, a proteasome inhibitor (PI) and an immunomodulatory drug (IMiD).

64. The pharmaceutical composition according to any one of the preceding claims, for use in treating a cancer relapsed after a prior therapy comprising one or more of a CD38 antibody, a PI and an IMiD.

65. The pharmaceutical composition for the use according to any one of claims 63 and 64, wherein the CD38 antibody is daratumumab.

66. The pharmaceutical composition for the use according to any one of claims 62 to 65, wherein the cancer is a hematological cancer.

67. The pharmaceutical composition for the use according to any one of claims 62 to 65, wherein the cancer is selected from the group consisting of multiple myeloma, chronic lymphocytic leukemia (CLL), acute lymphoblastic leukemia (ALL), acute myelogenous leukemia (adults) (AML), B cell lymphoma, diffuse large B-cell lymphoma (DLBCL) and myelodysplastic syndrome (MDS), optionally wherein the ALL is B cell acute lymphoblastic leukemia (B-ALL).

68. The pharmaceutical composition for the use according to any one of claims 66 and 67, wherein the B cell lymphoma is selected from the group consisting of mantle cell lymphoma, Burkitt's lymphoma and follicular lymphoma (FL).

69. The pharmaceutical composition for the use according to claim 66, wherein the hematological cancer is selected from the group consisting of multiple-myeloma (MM), chronic lymphocytic leukemia (CLL), acute lymphoblastic leukemia (ALL), acute myelogenous leukemia (adults) (AML), mantle cell lymphoma, follicular lymphoma (FL), and diffuse large B-cell lymphoma (DLBCL).

70. The pharmaceutical composition for the use according to any one of claims to 62 to 65, wherein the cancer comprises a solid tumor.

71. The pharmaceutical composition for the use according to claim 70, wherein the solid tumor is melanoma, lung cancer, squamous non-small cell lung cancer (NSCLC), non-squamous NSCLC, colorectal cancer, prostate cancer, castration-resistant prostate cancer, stomach cancer, ovarian cancer, gastric cancer, liver cancer, pancreatic cancer, thyroid cancer, squamous cell carcinoma of the head and neck, carcinoma of the esophagus or

gastrointestinal tract, breast cancer, fallopian tube cancer, brain cancer, urethral cancer, genitourinary cancer, endometrial cancer, cervical cancer, lung adenocarcinoma, renal cell carcinoma (RCC) (e.g., a kidney clear cell carcinoma or a kidney papillary cell carcinoma), mesothelioma, nasopharyngeal carcinoma (NPC), a carcinoma of the esophagus or gastrointestinal tract, or a metastatic lesion of anyone thereof.

72. The antibody for the use according to any one of claims 70 and 71, wherein the solid tumor lacks detectable CD38 expression.

73. The antibody for the use according to any one of claims 62 to 72, wherein the cancer is in a patient comprising T regulatory cells expressing CD38.

74. The pharmaceutical composition according to any one of claims 1 to 58, for use in treating or preventing rheumatoid arthritis.

75. Use of the pharmaceutical composition according to any one of claims 1 to 58 in the manufacture of a medicament for the treatment of a disease comprising cells expressing CD38, wherein said medicament is to be administered to a patient in need thereof.

76. The use of claim 75, wherein the pharmaceutical composition is to be administered in a therapeutically effective amount and/or for a time sufficient to treat the disease.

77. The use of any one of claims 75 and 76, further comprising the feature(s) of any one of claims 59 to 73.